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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,002	07/12/2006	Jiro Osawa	KANEKO.015AUS	9304

7590 10/31/2007  
MURAMATSU & ASSOCIATES  
114 Pacifica, suite 310  
Irvine, CA 92618

EXAMINER
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ADDISU, SARA

ART UNIT	PAPER NUMBER
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3722

MAIL DATE	DELIVERY MODE
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10/31/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/586,002

Applicant(s)

OSAWA ET AL.

Examiner

Sara Addisu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/12/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Further review of the Specification does not clarify how the "central angle" is measured. Referring to figure 2, it is not clear how the position of the lines (that form the angle in between) are selected or what they represent).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Giessler et al. (US pub# 2004/0105729).

GISSLER ET AL. teaches a milling tool comprising: a cylindrical tool body which is to be rotated about an axis (7) thereof, and a nosed end cutting edges (i.e.

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lowest end of cutting edge 5) which are located in an axially distal end portion of said tool body and which describe a semi-spherical-shaped locus during rotation of said tool body, wherein each of said nosed end cutting edges includes a first portion provided by a radially inner portion and defined by a circular arc with a first radius ( $r_1$ ) and a second portion contiguous to said first portion and provided by a radially outer portion of each of said end cutting edges defined by a circular arc with a second radius ( $r_2$ ) where  $r_1$  is smaller than  $r_2$  ('729, figure 3b and parag. 29, last 6 lines).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-8, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolker et al. (US pub# 2005/0025584).

KOLKER ET AL. teaches a milling tool comprising: a cylindrical tool body which is to be rotated about an axis (28) thereof, and a nosed end cutting edges (24,26

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together) which are located in an axially distal end portion of said tool body and which describe a semi-spherical-shaped locus during rotation of said tool body, wherein each of said nosed end cutting edges includes a first portion provided by a radially inner portion (24) and defined by a circular arc with a first radius ( $r_1$ ) and a second portion (26) contiguous to said first portion and provided by a radially outer portion of each of said end cutting edges defined by a circular arc with a second radius ( $r_2$ ) ('584, figures 4 & 5). Regarding claims 3 and 7, KOLKER ET AL. discloses the claimed invention (i.e.  $r_1$  and  $r_2$  being measured in relation to the diameter of the tool, '584, parag. 28, line 9 & 13), except for the ratio of  $r_1$  being  $0.025d - 0.10d$  and the ratio of  $r_2$  being  $0.55d - 0.65d$ . It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify KOLKER ET AL.'s cutting edge radius depending on the size of the milling tool and type of cut desired on the workpiece, because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Regarding claim 4, as best understood, KOLKER ET AL. teaches in an end view angle (B) of 15 degrees ('584, figure 3). Regarding claim 5, KOLKER ET AL. teaches said first and second portions of each of said nose end cutting edges are connected to each other at a connection point (P: see attachment I) and wherein a first circle that is partially constituted by said circular arc defining said first portion is inscribed at said connection point (P) to a second circle (shown in figure 4) that is partially constituted by said circular arc defining said second portion. Regarding claim 6, KOLKER ET AL. teaches peripheral cutting edges (28) each of which is contiguous to said second portion (26) of

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a corresponding one of said ball-nosed end cutting edges and extends away from said axially distal end portion toward a shank portion of said tool body. Regarding claim 8, although KOLKER ET AL. shown two diametrically opposed nose cutting edges, it is old and known to increase the number depending on the size of the tool.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior arts disclose milling tools.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu  
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10/30/07

*Monica S. Carter*  
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SUPERVISORY PATENT EXAMINER